MONTANA TEEN DRIVER EDUCATION AND TRAINING

Module 4.3 – Urban Driving
Lesson Plan & Teacher Commentary

Long-term Learning Goals:
The student distinguishes how driving conditions and characteristics in urban areas are different than other driving environments. The student applies time and space management strategies with vision control, motion control, and steering control for good driving habits within urban driving environments.

Students' Learning Targets:
The student is expected to:

1. **List, describe and respond to characteristics of urban driving environments.**
2. **Recognize and respond to signs, signals, and markings.**
3. **Describe and respond to hazards associated with urban driving.**
4. **Describe and respond to different types of intersection and roadway configurations.**
5. **Describe and demonstrate time and space management strategies for urban environments.**

Materials Needed:

1. **Module 4.3 PowerPoint Presentation**
2. **Module 4.3 Fact and Work Sheets (printed for each student)**
3. **Module 4.3 Teacher Commentary (printed out)**
4. **Red and green cards for video student activity**

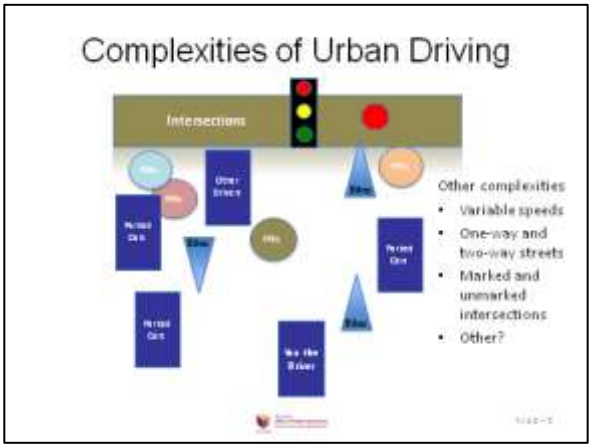
TEACHER COMMENTARY
The following teacher commentary includes questions you can ask during the presentation to engage students and have them develop key concepts related to urban driving.

Thumbnails of the module slides are provided to help you to connect the materials, data, and questions with the presentation.

Slide 2: Objectives
These slides provide a summary of the Essential Knowledge and Skills topics for Urban Driving.

Slide 3 – What are urban environments?
Urban environments are complex and require using all the skills you have learned so far to drive safely. The students are not required to learn this list so much as to begin to appreciate the unique nature of urban environments. Urban environments can be in towns, small cities as well as large cities.

Slide 4 – Complexities of Urban Driving



The urban driving environment is very complex and each element adds increasing complexity as it is encountered by drivers. To manage the urban environment the driver needs to be aware of the various elements and how they are going to influence their decisions and actions.

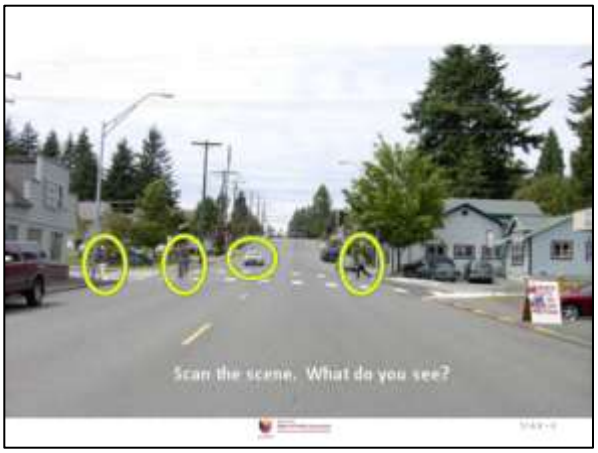
Timely decision making and awareness of risks, such as blocked LOS and POTs, will help the driver when responding to a challenging situation. This skill allows the driver to make slight adjustments of speed and position rather than major adjustments of one or the other.

Driving gets more complex as we increase our speed. Taking the car out of balance increases risk because of the natural laws car and driver must obey. Crash risk does increase the faster we drive. In urban environments, the complexity is more about avoiding conflicts with the diversity of HTS users. The more we add to the driving world the more risk we have of crashing with another user. (See animation on You Tube – 3 Way Street.)

To manage the risks, we need to identify them using the zone control system and make adjustments to our speed, lane position and communication in a timely manner. This helps us create space near and around other HTS users.

This slide is a conceptual representation of a complex urban environment. If the user waits to manage each of the risks when she is upon them she will have too many things to deal with and run the risk of striking someone or something.

Slide 5 – Urban Driving Complexities



This is a simple city street with few complexities. As you click through the slide you will notice that complexities are added.

Have the students evaluate the slide as it comes up. Identify what is happening in their right front, front and left front zones and the actions they would take as they approach this intersection.

Questions you may want to ask:

- **How should you scan this intersection you are about to enter?**

- **What do you see in your right front zone?**
- **How will you respond to the closed right front zone?**
- **What do you see in your target area?**
- **How will you respond to the closed LOS in your target area?**
- **Now click to the next slide—Notice the appearance of a pedestrian on the left corner.**
- **What should the driver do now?**
- **What if he is just standing there not intending to cross?**
- **How do you know?**
- **What are my lane position and speed control options?**

Click to the next slide and a cyclist appears as well.

- **What do I see and how should I respond to it?**
- **What could the bicyclist do if he notices the pedestrian late?**
- **What are my lane position and speed control options?**
- **What are my speed control options?**
- **Why did they change?**

Click on the slide again and a car appears in the oncoming lane.

- **What are your lane position options?**
- **What are your speed control options?**
- **What other zones should you check?**

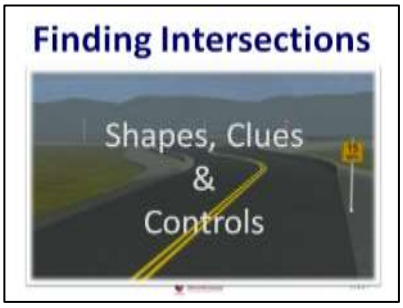
Final click and pedestrian on the right appears and looks like she is just going to cross without looking.

- **What should you do in this situation?**
- **Could you manage this situation if all the elements of the traffic scene were there at one time?**
- **How would you do it?**
- **Why is important to scan to your target area, solve at your 15 second range, and control at your 4 second range?**

As we encounter more users of the HTS we see that our options become more limited. What happens to our lane position options and our speed control options?

Slide 6 – Finding Intersections

Urban intersections are high risk because of the cross traffic, stopped traffic, people turning left and right, pedestrians, parked vehicles, blocked path of travel and line of sight, and traffic control devices. Early detection of an intersection is critical. Using good visual habits to see the clues and shapes at an intersection will greatly reduce your risk. This next section is an opportunity to see the different clues you can use to identify an upcoming intersection.



Slide 7 – Remember Zone Control?

Mottola's Zone Control system gives us three searching ranges. Finding conflicts and LOS-POT blockages in your target area range gives you more opportunity to solve problems with greater ease than if you found them in the 4-second range. Good vision control and searching strategies will help you navigate through the urban environment.

Slide 8 – What's an intersection?

First the driver has to know what an intersection is and what it looks like from the driver's seat. Once they have done that they have to look for the controls that regulate the intersection. Stop signs, traffic lights, yield signs, etc. They also need to know what to expect by the various kinds of user they might expect in that intersection.

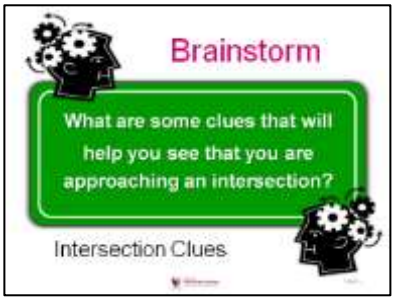
Slide 9 - They can be any shape

Warning signs before an intersection gives us an indication of an approaching intersection and what type of intersection we will encounter. Knowing the shape will also give the driver information about where they should look, what they should look for, the lane position they should move to, and the speed control options they may want to exercise.

Slide 10 – Brainstorm Student Activity

Before an intersection can be searched and controlled you must know you are approaching an intersection.

Student activity: What kind of clues can you come up with to help them identify an intersection while you are still 15 – 30 seconds away?



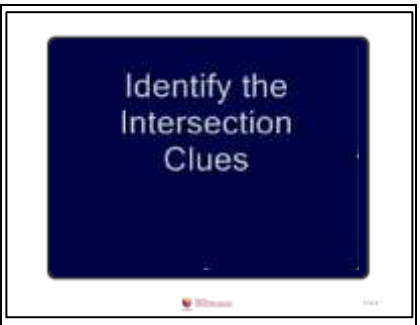
Slides 11 –Your turn to find clues

This 6-minute video gives students the opportunity to scan the roadway and look for intersections. Remember that the urban environment has many types of intersections. Using these clues to identify upcoming intersections will help the driver exercise the "solve and control" elements of the driving process.

Slide 12 – Identify the Intersection Clues - Video

Play the video several times and have the students say stop when they see a clue for an upcoming intersection.

You can stop the video by moving the cursor over the video and clicking. Start the video the same way.



Slide 13 – Which clues are easy to see in the target area?

Some intersections are difficult to identify in the target area. To have great intersection control, the first thing you must do is be alert for intersection clues. You can't solve and control problems at intersections if you don't find them.

Slide 14 – Where are the intersections located?

No road signs. Yellow curbs are clues. There may be intersections where the road levels off and at the crest of the hill.

Slide 15 – Intersections?

Five intersections:

- **three with stop signs;**
- **the fourth is controlled with a yield sign (triangle shape on left); and**
- **one in the target area at the top of the hill crest.**

Driveways are important and you may find traffic entering the roadway or pedestrians but they are NOT intersections.

Slide 16 – Intersections?

Three can be seen. Where are they?

1. **Green street sign on left behind the white truck**
2. **The white pedestrian-crossing road markings**
3. **In the target zone at the top of the hill where there are traffic lights.**

Slide 17 – Intersections?

One on the right and one in the target area.

Slide 18 – Intersection Controls

- **Yield to vehicles on the right.**
- **Left turning vehicles yield to oncoming traffic.**
- **Stop and wait for a safe gap.**
- **"Lefts have no rights"**

Slide 19 – Who Must Yield?

Access and retrieve the Yielding Worksheet. Distribute it to the students as you work through the next 6 slides of the presentation. You may want students to work in groups of two or three to complete the worksheet as you discuss the "Who Must Yield" laws.

Slide 20 – Who Must Yield?

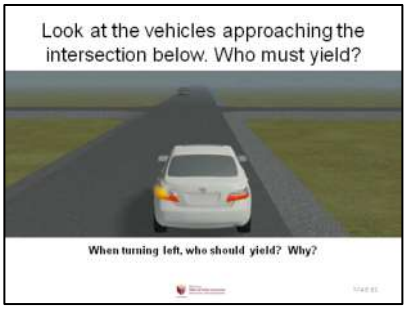
These are references to the law in Montana which are consistent throughout the nation. These references are not intended for you to engage in an episode of legal wrangling. It is more as a reference and to provide guidance in your discussion with the students. Again, remember that when you talk about right-of-way laws, even though someone might have the right of way and another must yield to them, that people may not follow the law or be aware of their responsibilities. They also might be on their cell phone or texting and distracted from their obligations as a motorist.

61-8-339. Vehicle approaching or entering intersection. (1) (a) Except as provided in subsection (1)(b), when two or more vehicles enter or approach an intersection from different highways, the driver of the vehicle on the left shall yield the right-of-way to all vehicles approaching from the right that are close enough to constitute an immediate hazard.
(b) The driver of a vehicle on a highway that intersects another highway without crossing it shall yield the right-of-way to all vehicles approaching from the other highway that are close enough to constitute an immediate hazard.
(2) The right-of-way rule declared in subsection (1) is modified at through highways and otherwise as stated in this chapter.

Slides 21-22 – Who must yield?

61-8-340. Vehicle turning left at intersection. The operator of a vehicle within an intersection intending to turn to the left shall yield the right-of-way to any vehicle approaching from the opposite direction that is within the intersection or close enough to the intersection to constitute an immediate hazard. Once the operator has yielded and provided the operator is giving a signal when and as required by this chapter, the operator may make the left turn and the operators of all other vehicles approaching the intersection from the opposite direction shall yield the right-of-way to the vehicle making the left turn. The provisions of this section do not apply where it is otherwise directed by official traffic control devices.

At a 4-way stop, who should yield? Why?



Slide 23 – Who must yield?

61-8-342. Vehicles approaching "Yield" sign. An operator of a vehicle approaching a "Yield" sign is subject to the following provisions:

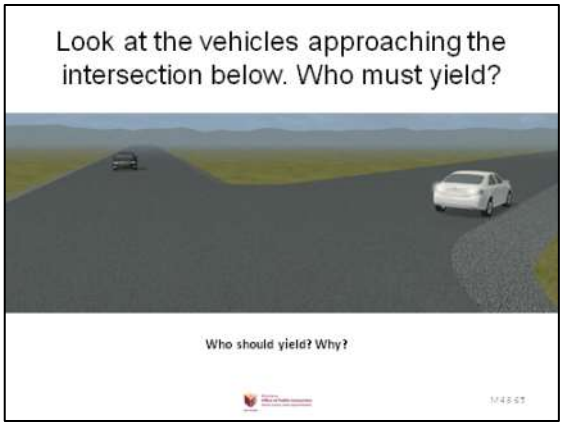
(1) The operator shall slow to a speed that is reasonable for existing conditions and, if required for safety, shall stop before entering the intersection.

(2) After slowing or stopping, the operator shall yield the right-of-way to any vehicle in the intersection or approaching on another roadway close enough to constitute an immediate hazard during the time that the operator is moving across or within the intersection or junction of roadways.

(3) An operator of a vehicle shall yield the right-of-way to pedestrians within crosswalks at the intersection.

(4) If an operator of a vehicle, after having driven past a "Yield" sign, is involved in a collision with another vehicle at an intersection or junction of roadways or with a pedestrian in an adjacent crosswalk, the collision is considered prima facie evidence of the operator's failure to yield right-of-way.

Slide 24 – Who must yield?



61-8-345. Stop before emerging from alley, driveway, private road, or building. The operator of a vehicle within a business or residence district who is emerging from an alley, driveway, private road, or building shall stop the vehicle immediately prior to driving onto a sidewalk or onto the sidewalk area extending across an alley, driveway, or private road and shall yield the right-of-way to pedestrians. Upon entering the roadway, the operator shall yield the right-of-way to all vehicles approaching on the roadway.

61-8-358. Limitations on backing. The driver of a vehicle shall not back the same unless such movement can be made with reasonable safety and without interfering with other traffic.

Slide 25 – Who must yield?

The same is true for pulling forward out of a driveway or alleyway.

61-8-345. Stop before emerging from alley, driveway, private road, or building. The operator of a vehicle within a business or residence district who is emerging from an alley, driveway, private road, or building shall stop the vehicle immediately prior to driving onto a sidewalk or onto the sidewalk area extending across an alley, driveway, or private road and shall yield the right-of-way to pedestrians. Upon entering the roadway, the operator shall yield the right-of-way to all vehicles approaching on the roadway.

Slide 26 – Your Turn

The next series of photos is of intersections and urban settings in cities and towns throughout Montana.

Using what you know about intersections, identify what you are legally obligated to do in the given situation.

Slide 27 – Where do you search?

Who must yield? Where should you search and what should you do about your speed? Why is there a flashing light?

This is high-risk intersection because of the blocked LOS on the right. The upcoming school is also reason for caution. You should move to lane position 2 and slow down to scan the intersection.

Slide 28 – What about this intersection?

Check rear zone, stop, and then when the light is green search the intersection and proceed straight ahead when clear. Remember the two-second delayed start on a green light.

Slide 29 – What must you do at this intersection?

The SUV arrived at the intersection first and stopped. He should proceed through the intersection before you proceed. Remember you should scan the intersection before you proceed through it.

Slide 30 – What must you do here?

Since you are the last to arrive at the intersection, the front cars at each of the other stop signs should go before you. Then it's your turn. Remember to scan before you proceed through the intersection.

Slide 31 – What must you do here?

This is a tricky intersection in Helena. Approaching from the right you will see a stop sign and a "left turn prohibited" sign. The only action the driver can legally take is to turn right. There is a barrier across the street that prevents the driver from crossing the street.

Slide 32 – Delayed Start on Green

Drivers who leave from a traffic light the second it turns green run the risk of colliding with crossing vehicles that run red lights. A two-second delayed start will reduce your risk of intersection collision. Remember to scan the intersection before entering.

Slide 33 – Driving Scenario: Turning right

Remember to have the students describe each of the steps to make a turn.

1. **Check rear zone.**
2. **Signal to the right.**
3. **Right side blind spot check.**
4. **Move to LP 3, LP 5, LP 2 in the new position and finally three feet from the right curb.**
5. **Slow down.**
6. **Scan left-front-right looking for cross traffic, turning traffic from the front, and pedestrians crossing the street you are turning onto.**
7. **Check ??.**

Slide 34 – Driving Scenario: Turning left

Work with the students to answer the questions on the slide.

There are three lanes—two travel lanes and one left turn lane. You can turn left at the signal but it means making two lane changes before you get to the light. It may not be legal to cross two lanes to get to the left-turn lane in time to make the turn. It is surely not safe because of the roadway conditions and the amount of traffic.

The driver could go to the next light and turn left. Or turn right instead and drive around the block.

Slide 35 – Driving Scenario: Moccasin, MT

Moccasin, Montana 59462
State Highway 200

This constitutes an urban environment for many Montana students. What precautions should they take as they approach and drive through the town? What is unique about this urban environment and how is it similar to Missoula or Billings?

The town still has intersections, driveways, businesses, variable speed zones, and traffic control devices.

What makes it unique is that even though it is an urban environment the traffic volume and complexity is less than you will find in Missoula, Helena, or Billings.

Slide 36 – Driving Scenario: Helena, MT

One-way street in Helena. The signs above the road tell drivers what to do at this intersection. Describe what you are legally required to do in each of the three lanes at the next intersection.

You are the silver car pulling out of the driveway and you want to go to Missoula. What do you need to do safely and legally drive to Missoula?

Slide 37 – Timing Traffic Lights

The video that follows takes the students behind the wheel where they either need to slow down or go in traffic. They encounter numerous traffic light scenarios. To do this student activity you will need small red and green cards the students can hold up to indicate their choice when they are asked whether they should slow down or go.

Start with letter-size (8.5 x 11") red and green cardstock. Cut in half and then half again so you end up with 5.5" x 4.25" cards. Apply a large "a" to the green cards and "b" to the red cards. (You can find card stock and large self-adhesive letters at an office supply store).

As you watch the video it will pause at certain points so the students can communicate their choices. This will also help you evaluate if they understand how to manage speed with traffic control devices.

If you downloaded this presentation from the OPI's website, you will also need to download the file TimingTrafficLights.pdf into the same folder. Otherwise, the video will not play. Click on it and it will begin to play. Make sure your speakers are turned up.

Slides 38-39 – Putting the Pieces Together

Lane configurations video on Slide 40

1. **Five lanes with a left-turn lane.**
2. **Eight lanes with a raised center median, two travel lanes in each direction, two bike lanes, and two parking lanes.**
3. **Four lanes, two in each direction separated by double yellow line, no shoulder.**
4. **Four lanes, two in each direction separated by a raised median.**
5. **Three lanes with a shared center left-turn lane.**
6. **Four lanes, two travel lanes in opposite directions and two parking lanes.**
7. **One lane around a raised median with construction.**

Multiple users of the HTS

1. **Cars on the road, cars entering traffic and a cyclist with a dog.**
2. **Approaching traffic on the left on a narrow bridge with pedestrians on the right with no sidewalk.**
3. **Pedestrians in a crosswalk.**
4. **There are more than are represented here so have the students identify what other HTS users they might encounter.**

Signs and Signals

They are in multiple locations and inform the driver of their legal responsibilities.

1. **Lights and No Left Turn signs and paint on the roadway indicating what the driver in each lane must and can do. One-way signs on the right and solid white line preventing a lane change at this intersection. What happens to these lines in the snow?**
2. **Overhead signs telling the driver in each lane what they are permitted and required to do. Paint on the pavement and traffic signals at the intersection. The question that comes up on the screen should be answered when the driver can only turn right at the intersection.**

Congestion

1. **A characteristic of urban environments is congestion caused by more cars in a confined space having to respond to traffic control devices, forced to drive slowly. This is what is sometimes referred to as "bumper-to-bumper" traffic. Remember that if you have to stop, make sure you can see the rear tires of the stopped car in front of you touching the pavement.**

Turning lanes and protected left turns

1. **Turning lanes give the driver space to wait for a left turn. The driver still needs to make a lane change to the left to get into the left-turn lane. In this particular video the driver appears to wait too far back. You can see that the driver approaches the stop line and stops. The video is edited to cut out the wait time for the protected left turn. The clue to this is the vanishing truck on the right. Watch for it. This is a large intersection and has a traffic control**

device in the form of a dashed yellow line to the left of the driver. This indicates where the driver should go as they proceed with their left turn.

Tight Spaces

1. **Traffic stop has two police cars on a narrow road. Slow down and share the lane to the left with oncoming traffic to create space for the safety of the police officers.**

Parking Lots

1. **Narrow spaces, narrow lanes with pedestrians, parking and moving cars, pulling forward and backing up, and shopping carts that can get in your way.**

There are many more complexities, but this provides a good sampling of what a student should expect when they drive to Billings, Bozeman, Missoula, Butte, Great Falls or Helena.

Slide 40 – Complexities of Urban Driving

Complexity in this location is caused by the un-striped road, the construction equipment and cones, the oncoming traffic and the parked cars. What else should the driver expect to encounter in this location?

Slide 41 – Lane-ending scenario

The complexity of this situation is the driver's poor planning. Her lane is ending and she has nowhere to go. What could she have done differently to minimize her risk?

Did the other drivers cooperate here? Why or why not?

Slide 42 – Urban Environments Review

This slide is a reiteration of a slide at the first part of this presentation. It is not necessary to review all of these. It is just a reminder that it is complex and only becomes more complex as more elements are added.

Slides 43-44 – Standards and Benchmarks

Standards and Benchmarks 1-8: This is for your reference and not to be read to the class verbatim. Please review prior to the lesson so you are aware of what the student will be required to know at the end of the module.

Updated 4/14/2014